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Wildlife*

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# Virginia Wildlife

*A Monthly Magazine Dedicated to the  
Conservation, Restoration, and Wise Use of  
Virginia's Wildlife and Related Natural Resources,  
and to the Betterment of Hunting, Fishing and  
Outdoor Recreation in Virginia*

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**COVER:** The long-legged great blue heron is commonly seen in Virginia's swamps, around lakes and ponds, and along river courses. It lays three to six eggs in nests made of sticks in the trees, and feeds largely on fish and frogs. Photo by Karl H. Maslowski.

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## Water Safety

OUR growing leisure time and desire for fun and relaxation are costing us dearly. Not only are we paying handsomely for our outdoor recreation in terms of money, time and effort, but we are also paying dearly in terms of human suffering and tragedy. America's phenomenal upsurge in boating and water accidents and deaths is a case in point.

In Virginia a big hoot and holler is made over our hunting accidents. But, comparatively speaking, hunting accidents are a much less serious problem. The average death toll attributable directly to hunting in Virginia is, on the average, but four or five a year. While even this is to be regretted and every effort should be made to cut down on hunting accidents, the death toll due to drowning is some 30 times this number. According to the Virginia Department of Health, the Old Dominion had an appalling 160 drownings in 1959. What the figure will be in 1960 nobody knows, but our guess is that it will closely approximate, if not exceed, last year's figure.

Of course, all drownings are not attributable to swimming, boating, hunting and fishing, and other forms of outdoor recreation. Some of the 160 cases, it is true, were miscellaneous drownings, such as drowning in a family bathtub, and had nothing to do with recreation. Yet, it must be conceded that *most* drownings in one way or another are connected with outdoor recreation.

Why the unnecessary taking of human life in connection with outdoor recreation which is meant to be safe as well as pleasant and rehabilitating?

No doubt there are many factors which enter the water safety picture. The fact that we have so many more people is one. Another is that our standard of living has steadily risen and more people can afford boats and more outdoor recreation. Moreover, the "two autos in every family" idea and ease of travel, including more of it—putting recreation within reach of more people—are other factors. Finally, a shorter work week and longer paid vacations are still other considerations. Surely all these factors are making more people use our waters, thereby exposing themselves to more danger, thus adding to the accident rate. What's more, today we have about ten times as much inland water as we did 20 years ago.

Our guess, however, is that the whole problem is vastly more complicated than what appears on the surface and will not be solved easily. Accidents can be cut down appreciably, but, like traffic deaths, a certain number of accidents will be unavoidable and is the price we must pay for our modern way of living and doing. Perhaps if we could somehow discipline ourselves more sternly to the stringent requirements of our new age and make safety a sort of an attitude—a philosophic consciousness—we might be able to cut down on the water accidents appreciably. Perhaps, therefore, we are only paying the price that we must when we forsake the life of the country, and all its rigors and requirements, for the less exacting outdoor requirements of urban and suburban living.

A basic tenet of conservation which few generations of men have learned is that man must work with nature and respect her laws—or pay the price. The air above us, the lands upon which we live, and the waters upon whose surfaces we venture, have their laws and exacting requirements and when we transcend them, as we often do, nature strikes back sharply. The price of our water transgressions comes high.—J. J. S.

### Re: The Free Running Dog

I would like to tell you what I think about the recent article on free running dogs. I would tell you if I could find the words. He has the subject wrapped up in strong brown paper and tied with good cord. He has covered every important aspect of the situation in one short article. He has made no mistakes either, unless it be offending some ignorant people—he will surely do that. I guess I am an obscure backwoodsman, but I live with this situation and I know he is right all the way.

James R. Boldridge  
Disputanta, Virginia

THE article entitled "The Free Running Dog," by Robert H. Giles, in the June edition of *VIRGINIA WILDLIFE*, was, to me, most astonishing and appalling. I never realized that such a condition existed, that is, to such a degree. I am writing this letter to offer a suggestion that perhaps may help the situation. An ameliorative measure might be to educate the public, especially dog owners, as to the ultimate and horrible fate of a dog that is left to fend for itself. This, I imagine, could be done by having a few thousand posters printed, illustrating by picture the wretched condition of a dog after he has been alone on the road for a few days. These posters could be posted on trees and utility poles along highways and roads that might be used to abandon an unfortunate animal. Surely, most people at least, after viewing such a sight, might reverse their decision if they had been entertaining an idea of turning their dog loose and leaving him.

Helen V. Bierly  
N. Miami, Florida

### Is This Lure Legal?

MR. EDITOR, I am in need of your unbiased and expert opinion. Late last summer, I devised an entirely new method for fresh water fishing—a technique which may revolutionize the piscatorial science or art. In fact, it is so effective that I planned to keep it secret. But I am not primarily a selfish person and I do like to see my fellow sportsmen enjoy the time spent in woods and fields or on the stream. And as I get a real thrill from fishing, I've decided to tell my secret to others and thus add to their enjoyment of this sport. But before I do so, there are a few questions concerning the legality and sportsmanship of my method which I hope you can resolve.

You see, Mr. Editor, I have designed a most unusual fly. It is quite unlike anything a fish (or for that matter any fisherman) has ever seen. I know in these days of unusual gadgets this is claiming a lot, but the reactions of the fish will support my statement. For when any fish sees my fly, it bursts out laughing. Obviously, it reasons, "I've seen everything now. And I'd just like to know how foolish a human can get to think any fish would be deceived by that ridiculous contraption." And the more closely it examines my fly, the greater its mirth.

(Continued on page 26)



Commission Photos by Cutler (left) and Kesteloo (right)

Experience has shown that the release of captivity-reared birds and animals is not the sure way to game abundance. Virginia's game biologists work to provide suitable habitat (as at left), knowing that small game species, because of their high reproductive rate, will do the rest. Quail-raising at the state game farm (shown at right) has been discontinued.

## Sound Management Is The Answer

By RICHARD H. CROSS, JR.

*Chief, Game Division*

**A**MONG other things, the Virginia General Assembly has empowered the Virginia Commission of Game and Inland Fisheries to "conduct and carry on such operations for the preservation and propagation of game birds, game animals, fish and other wildlife as it may deem proper to increase, replenish and restock the lands and inland waters of the State." Through the years we have come to refer to these operations as "management."

The Commission's management job is accomplished indirectly through the efforts of the fiscal and education divisions and more directly through the divisions of law enforcement, fish and game. The game division is charged specifically with the management of migratory and non-migratory game birds and animals and furbearers.

The term "game management" means many things to many people. To some it is the production and release of captivity-reared game birds or animals to supplement native stock. To others it is the control of undesirable species and the establishment and enforcement of restrictive hunting seasons and bag limits. To others it is the development and maintenance of ideal habitat. To some it is the introduction of new and foreign species. To the professional game manager it is a combination of these things.

Game management was defined by the late Aldo Leopold as "the art of making land produce sustained annual crops of wild game for recreational use." In other words, wildlife is a natural renewable resource which may be produced and annually harvested just as any other crop. The same irrefutable laws apply. Maintain sufficient brood stock, provide suitable habitat, harvest the annual surplus and the resource will flourish. Ignore these basic principles and wildlife will suffer.

It becomes obvious that the management of Virginia's wildlife resource is a tremendous undertaking composed of numerous and varied tasks. The game division, composed of approximately 50 technical and non-technical employees, is the nucleus of a much larger force necessary to carry out the overall program. Every member of the Commission's field force is a full-time game manager. The game division, under the supervision of the executive director and with the concurrence of other division chiefs, plans the program. Every day 140 Warden Supervisors and State Game Wardens inform individuals or groups of current activities, assist in preparation of game management plans on private lands, collect scientific data for use in evaluating and improving management techniques, train landowners in the control of nuisance species.

distribute hard-to-get planting materials for the improvement of wildlife habitat, educate Virginia youth and grown-ups in the utilization of the resource, deter the few who ignore the rights and privileges of all of the Commonwealth's citizens, and perform work on areas managed for public use. Fish division personnel are expected to and do render valuable aid during periods of peak work loads. The education division through various publications, news releases and personal contacts, contributes substantially to the successful operation of game division projects and programs.

Sound management requires sound objectives. Our primary responsibility concerns the development of techniques and assistance in the management of upland game on private lands throughout Virginia. Game division personnel carry out research on experimental areas in representative sections to determine effective and economical methods of increasing and/or maintaining game populations. Upon request, they provide technical assistance in the preparation of game management plans for private landowners. Limited quantities of planting materials which might not be available on the open market are sometimes furnished.

Through cooperative agreement the division manages lands owned by other government agencies, corporations and private individuals for public hunting. Wildlife management work is performed in accordance with annual work plans prepared by the division and approved by the landowners. Law enforcement personnel patrol these areas during the hunting and fishing seasons and whenever the purposes of the agreements can be furthered.

Another important job concerns the management of Commission-owned lands for public hunting. Here, the multiple-use plan of management with emphasis on the production of game species is applied and every attempt is made to make such lands self-supporting through the sale of timber and wood products managed in cooperation with the Virginia Division of Forestry.

Another game division objective includes the acquisition of additional lands for use by Virginia's hunters through cooperative agreements with landowners and by actual purchase as funds become available. Sections of the state are delineated according to public hunting needs and available lands are located within these areas. General long-range plans for proposed management areas include cost estimates for purchase and/or management. It is necessary to determine the minimum acreage for each unit based on principal species to be managed, anticipated hunter pressure and proximity to other hunting areas.

Our restocking efforts are devoted to the experimental introduction of new species and the re-establishment of native species whose numbers have been drastically reduced in the past. The wild turkey, for example, was completely exterminated in southwest Virginia many years ago. At the present time we are attempting to restore this game bird to the area through the release of wild birds trapped on our Gathright Wildlife Management Area in Bath County and on the Big Levels Federal Wildlife Refuge in Augusta County. The results of previous efforts indicate that this work will be successful.

Past experiences in Virginia and elsewhere in the United States have proven that the release of captivity-reared birds and animals is not the sure way to game abundance. As already mentioned, we cannot ignore the basic management principles, the most important of which deals with the provision of adequate habitat. Provide suitable habitat and, in

most instances, the game will do the rest. We might conclude that stocking can be justified in no more than two specific situations. When a large area is absolutely devoid of brood stock, as in the case of the turkey in southwest Virginia, stocking in combination with other management practices may be justified. The small game species such as quail and rabbits seldom, if ever, need replenishment due to a tremendous reproductive rate which enables them to withstand extremely high losses and come back in the course of one breeding or nesting season.

The other justification for stocking concerns the introduction of new species in areas where native birds or animals have been unable to cope with gradually changing land use trends and, therefore, do not exist in huntable numbers. This has happened to the bobwhite in some of our intensively cultivated or grazed areas and we are currently experimenting with various foreign game birds in an effort to find those adaptable to such situations.

Sound management necessitates continuous research designed to produce information necessary for use in everyday work. White-tail deer research consists of a determination of population trends through the use of reported deer kill and the correlation of antlered buck harvest and forest range. Sex and age ratios are determined through field observations and examination of reported kill, and this data is developed for use as a management tool. For example, doe-fawn ratios are indicators of deer productivity. Herd conditions are measured by a comparison of antler development, weights and body measurements of equal-aged male deer. We are in the process of determining the amount of deer range in each county in Virginia and the amount of deer each type of range will support without detriment to the animals or the range. It is necessary to determine the types of hunting regulations necessary to obtain the desired annual kill by using percentages and ratios of deer harvested under various hunting regulations and from information concerning the relationship between deer killed and hunter pressure. Virginia participates with other southeastern states and the University of Georgia in the diagnosis of deer diseases as well as prevention and control measures.

In connection with wild turkey management, we are attempting to refine techniques in sexing and aging turkeys in order that this information might be used to determine annual productivity including rearing success. Population trends are determined through the use of practical census methods and the reported turkey kill. Efforts are being made to pinpoint the important limiting factors connected with poor turkey range through the comparison of areas of high and low populations using census data, the reported annual kill and field observations. Turkey range, by counties, will be evaluated through the use of a knowledge of the factors limiting populations as determined above. We also need to know the effects of land-use trends on turkey populations. Among other things, we will study the effect and feasibility of a spring gobbler season, utilizing the experiences of other states, and experiment with this type of hunting on selected areas in Virginia in the future.

Our black bear research includes efforts to devise a means of estimating total populations. We hope that the percent of a known number of tagged bears killed by hunters will closely approximate the percent of the total population being harvested annually. Reproductive rate is being determined through a study of embryos and female reproductive tracts

(Continued on page 10)

# New Reservoirs Provide Recreation

By NORMAN W. WILSON, *Agricultural Engineer*  
*USDA—Soil Conservation Service, Richmond, Virginia*

U.S. Soil Conservation Service Photos

**T**HE South River Watershed Project, though only half finished, has already given Waynesboro and surrounding Augusta County folks new recreation areas as well as flood protection. These areas, centered around the new flood-retarding reservoirs, are beginning to have a noticeable effect on community life.

Eleven of the 17 planned flood dams have been built. They control flood runoff from 22 percent of the 92,000-acre watershed. Their value was especially welcome when Hurricane Gracie dumped five inches of rain on the watershed in September 1959. The dams held back millions of gallons, lowering flood waters more than a foot in Waynesboro.

The project also includes stream channel improvement, roadside erosion control, tree planting and other upland conservation on farms. It is part of the Potomac River Flood Prevention Project. The U. S. Soil Conservation Service heads the program for the Federal government.

A high rate of local interest gave the South River priority in getting under way in 1954—ahead of several similar projects. Eventually, a chain of flood protected Potomac tributaries will give a large part of Virginia's Shenandoah Valley much-needed flood protection.

One of South River's new reservoirs is located just above the CCC-built Sherando Lake in Big Levels Game Refuge. This 20,000-acre wildlife area, maintained cooperatively by the Federal Forest Service and Virginia's Commission of Game and Inland Fisheries in George Washington National Forest, has become the leading recreation area for local wildlife groups, scouts and picnickers. The seven-acre trout-stocked lake formed by the flood-retarding dam has doubled swimming, fishing and boating facilities in the refuge. Scouts from all over the state now use the lake-side camp sites while visiting the refuge.

Two adjacent, SCS-designed ponds give waterfowl added breeding and feeding areas and make a total of 11 acres of new water surface in Big Levels Refuge. Wildlife authorities say this has brought an upswing in waterfowl activity over the entire area.

Underprivileged children will also enjoy special recreational benefits from the watershed project. The Waynesboro Kiwanis Club purchased 250 acres of land including a reservoir site near Greenville. There, the Kiwanians are building a new camp that will give scores of children a place to swim, boat and fish.

Another one of the 11 dams, built on the grounds of a state convict farm, has given them a five-acre pond that serves several purposes. Built primarily for flood protection, it also gives the state farm water for crop irrigation and fire protection. The prisoners will also have swimming and fishing privileges during limited recreation hours.

A small group of professional men, mostly doctors, purchased a 70-acre tract of land including the new five-acre

reservoir known as Site No. 24. The group is improving the woodland and planting feed and wildlife shrubs to attract wildlife. The area will also provide a summer campsite.

Other civic groups and local governments have similar interests in South River reservoir sites. More camps and public recreation areas are likely to develop.

Adjoining South River to the west in Augusta and Rockingham Counties are Middle and North Rivers. Plans for added watershed protection are under way for both. Here, also, recreation interest runs high, together with plans for municipal water storage. Farmers will have irrigation water when these reservoirs are built. As the projects progress, more use will be made of the billions of gallons of water that now annually rip through the flood plains of these Potomac tributaries.

Farmers in the two-county, 245-square-mile watershed drained by the South River have already done a great deal of upland conservation work. This is the all-important basic part of watershed protection work.

Guided by the Shenandoah Valley Soil Conservation District and Soil Conservation Service Technicians, land-operators have stabilized thousands of acres of farmland. Statistics show 1,900 acres are now protected by strip cropping; 3,352 acres of pasture have been improved; 80 acres of vegetated waterways carry water off farmland. Farmers have built 136 ponds. Trees have been planted on 173 acres of open land.



The odd-shaped framework on this structure—the outlet for reservoir number four—prevents trash from clogging the pipe and stops whirlpool action during high water stages.



In past years, debris-blocked channels were easily flooded by rains. Now upland conservation practices, reservoirs, and miles of cleared channels are alleviating this problem.



Dam number three at the state road force convict camp serves the camp's farm in addition to providing flood protection benefits downstream.

Gullies have been stabilized on 107 acres of badly washed fields.

Aiding this erosion control effort, Virginia's Highway Commission has revegetated 21 miles of roadbanks that were contributing silt to nearby streams.

The Potomac River Project, as it progresses, will bring many improvements to the Shenandoah Valley. Greater flood protection is the primary aim. With this will come the many side-benefits as lakes form behind flood-retarding dams. Towns will have many more industrial sites with adequate water. Thousands of tax dollars can be diverted from flood damage repairs to community improvement. Farmers will reap better harvests from erosion-protected fields. A generally improved local economy will give them a better market for their produce. New recreation areas will give the growing population room to relax.

The Potomac River Project, one of 11 Federal-sponsored Flood Prevention Watershed Projects in the U.S.A., is similar in technique to the hundreds of Small Watershed Protection and Flood Prevention Projects getting under way across the country. Projects under this new program, known as Public Law 566, are locally-sponsored with Federal aid. Today there are over 200 such projects covering more than 12

million acres in operation. Thousands of other projects have been applied for.

In Virginia, five PL-566 projects affecting more than 250,000 acres are ready for, or under construction. Nineteen others are in various stages in the development of watershed plans. Virginia is on the march against floods—and toward a day of vastly improved watersheds!

#### Private Group Presents Plan for Potomac River

Residents of the Potomac River watershed, working in a group known as the Coordinating Committee on the Potomac River Valley, have issued a comprehensive plan for development of the national river. The plan is based on the premise that ample water exists in the Potomac to meet all needs providing pollution is eliminated from the river and drainage lands are managed according to accepted and proven soil conservation techniques.

"Once pollution is thus completely eliminated, there will be adequate water for all reasonable purposes without the necessity for constructing huge impoundments and destroying the natural environments of our waterways," the committee observes.



"The Shenandoah is a quiet, beautiful stream. The scenery is as fair as the noble smallmouth bass that lurk in the deep holes and feed over the gravel beds at dawn and dusk."

## *Shenandoah Smallmouths*

By DON CARPENTER

*Annapolis, Maryland*

Commission Photos by Kesteloo

**S**HENANDOAH River smallmouth black bass fishing is as good or better than what most people find in Canada.

Of course, many believe that "distant fields are always greener." They may appear to be—but the old saying lacks a lot of truth.

For my money, a bass fishing trip to the Shenandoah offers more value per dollar spent than any trip this side of the Ozarks.

There are three principal bass fishing areas in the Shenandoah River. The best wading water lies close to Strasburg, starting above Riverton and going upstream towards Woodstock, along the North Fork.

The South Fork of the Shenandoah is water best suited to bass fishing from a boat. The Overall-Rileyville area un-

doubtedly has the largest smallmouth bass in all of the Commonwealth, when one considers average size. Another fine place to take fewer big bass, but of comparable size, is the main branch of the Shenandoah at Paris, Virginia, near some cliffs called "Lover's Leap."

Pollution from Riverton has damaged bass fishing above Lover's Leap twice in recent years, but fortunately the gamey smallmouths have made a comeback each time. Former Kentucky Governor Edwin Porch Morrow—an accomplished bass fan—told me on a fishing trip at Lover's Leap in 1929 that he had fished every bass stream in the Blue Grass State and that none compared with the brand of sport he found near Paris, Virginia.

The smallmouth bass is one of the gamest fish in fresh

water. It is spectacular because it jumps a lot when hooked and is very skillful in throwing the hook if the fisherman leaves slack in his line. Dr. Henshall once said, "Inch for inch and pound for pound, the bass is the gamest fish that swims." I can't agree, because I have caught a few fish that had the edge on bass . . . but not many!

The I. Q. of smallmouth bass is above average for the fish world. There are times when it seems nothing will make the big ones hit. And there are infrequent times when nearly all bass will hit most anything. This is particularly true when a "snow storm" of mayflies occurs on some section of the river. I have witnessed a number of mayfly "snow storms" or hatches in my life and never cease to be amazed by this phenomenon.

Count yourself lucky if you happen to be on the Shenandoah when The Big Hatch happens; it only happens once or twice a year. Suddenly during a calm the air fills with insects so numerous that they completely block the view of the shore less than 50 yards away. You can even take your hand and run it over one of your sleeves and gather a handful of struggling cream-colored insects with the up-tilted forked tails.

While the hatch is on, and it does not last long, all the fish in the river "go crazy" and swim around on the surface with their mouths wide open simply filling up on the winged tidbits. Bass, catfish, perch, crappie and even birds get into the act. It is a mad scene, and I hope you will experience it some day.

Smallmouth fans usually have some favorite method—some use only the fly rod, some are live-bait addicts. Plugs have a strong following, and spinning now seems to be the most popular way to fish for bass.

When I wade with a fly rod, I wear tough, heavy wading shoes, old trousers, a wide-brimmed hat and carry my matches and smokes inside the hat in case I step into deep water and have to swim. My spare lures are attached to the hat band, and if I were to take only one fly-rod lure it would be a Black Gnat Pilot fly No. 2/0 made by Pflueger. This wet fly with a double-blade spinner ahead will catch about any freshwater fish except a carp.

Live bait can be fished with any kind of tackle. I have found that the larva of the Dobson fly, a hellgrammite, is a fine river bait that will take bass, perch, or any kind of freshwater fish. You can catch your own supply by quickly turning over rocks in shallow riffles and grabbing them right behind the pincers on the head end. Hellgrammites are economical; you can frequently catch three or four bass or bluegills with one bait. Then, when it is killed and beaten up, take a

stick and turn the critter inside out so that the white interior shows—and you will catch some more fish with it. I have actually taken a dozen bass on one hellgrammite.

The madtom or stone cat, a small member of the catfish family, is a tough bait fish that frequently will lure more than one smallmouth. Madtoms cost from 10 to 25 cents each, when you can find a supply. Minnows are cheaper, but rarely live to take more than one fish.

Brightly colored minnows seem to have the most appeal for bass. A freshwater smelt is tops in the minnow line, IF you can keep it alive. Last year a new insulated minnow bucket was placed on the market that should help keep the most perishable minnows. Goldfish are good bait, but their use is prohibited by law in most waters. Most any kind of spring-branch minnows are good bass bait.

When fishing live minnows for smallmouths, I always hook them through the lips, just under the dorsal fin (not through the backbone), or near the tail. When a smallmouth grabs a minnow, it runs a short way, stops, scales the minnow, then turns the bait around in its mouth and swallows it head first. You must never try to stop the bass while all this is going on; just let the fish run against the click on your reel, freely, without overrunning the spool. You strike only when the second run starts, and must keep all slack out of your line when the fish jumps.

Plug casters use diving, floating, or popping plugs mainly. This brand of fishing calls for some accuracy on the part of the fisherman. Bass in the Shenandoah River mostly lie between the folds of the volcanic rock ridges that crisscross the stream—under ledges of rocks, under logs and tree roots, amid underwater tangles of brush, and in deep water holes. Many of the largest bass strike best at night, and I have made some unusual catches plugging late at night under a Shenandoah moon.

If you plan moonlight bass plugging and can't automatically spool your line evenly in the dark, I recommend that you buy a level-winding casting reel. All spinning reels have this advantage. Hooking and landing big bass after dark with a plug is not as easy as it sounds. Gang hooks are an extra hazard when handling struggling fish at night.

Spinning gear has captured the imagination of most bass fans today. It requires little fishing skill to use and is adaptable to both live and artificial bait. Among the most popular lures are the Abu Reflex and HiFi Garcia lures. The Shyster, Mepps spinners, and a host of other lures are also used.

In my book, the greatest challenge and the most sport in bass fishing lies in ultra-light tackle. The angler who lands a



"Inch for inch and pound for pound the gamest fish that swims," the smallmouth is golden green on sides and back with faint wavy olive blotches, fading to gray on belly. World's record: 14 pounds.

two-pound smallmouth bass on a two-ounce rod and one-pound test monofilament line has done something.

When you take a good smallmouth bass on ultra-light tackle, you will experience bass fishing at its best. Every powerful surge of the fish, every shake of its head, even its sulks on the bottom will be magnified by the sensitive rod and transformed into the acme of sport. Thread-line fishing is the fishing of tomorrow, and it gives a game fish an even shake.

When fishing from a boat, the bass caster should cast across or slightly downstream . . . never upstream. Those who break this rule lose a lot of expensive lures or find if they use live bait that it gets caught in the rocks most of the time. Smallmouth bass have a habit of following live and artificial baits when cast, before they finally hit. When using natural bait, do not be hasty about setting the hook.

Sometimes unusual baits will take large bass. I have caught them with a bullfrog hooked through the kidneys. I have caught them with live mice rigged with a harness for the hook and even floated downstream to a good hole on a board. When the mouse on its raft reaches the desired hole, I have yanked it into the water where it had to swim and the bass quickly took the struggling rodent.

Mice for bait are more humane than the old barracuda baits I once saw used in the Florida Keys, when live alley cats were hooked through the scruff of the neck to lure 'cudas from a deep channel.

Sometimes I have taken good bass in the Shenandoah River with live salamanders, with live crickets and grasshoppers, even locusts and June bugs. In the spring, worms and grubs account for many strings of bass. Frequently, pork chunks and

pork rind in a variety of colors added to your artificial baits will help attract bass.

Outboard motors can be used to get around on deep water in the Shenandoah, but be sure to shut them off BEFORE you reach the fishing grounds; then pole or row your boat quietly into the area you wish to fish. The motor manufacturers have tried to "sell" anglers on the idea that motor noise won't bother game fish . . . but don't you believe it!

If you don't believe me, just pick some clear water where you can see bass, then drop your metal tackle box one inch and watch the fish go!

The time-honored Virginia custom of live-bait fishing for bass from a flat-bottomed, double-ended boat "poled" with a long tree limb is still one of the most effective ways to take Shenandoah smallmouths. Anyone "hot rodding" with an outboard motor through such a fishing fleet is sure to make a lot of enemies.

You don't have to have money to have manners. If you are too lazy to row or pole a boat, at least you can shut off your motor when you are anywhere near a good fishing place. If you don't, you may learn the hard way "how to be a gentleman." It may be me that will throw a rock at you, and if I don't there will be plenty of others that will.

To me, the Shenandoah River is a quiet, beautiful stream, noisy only in flood time. The scenery nearly everywhere along this waterway is as fair as the noble smallmouth bass that lurk in the deep holes and feed over the gravel beds at dawn and dusk. In brief, you can beat your brains out on that long drive to Canada, but I for one wish to leave Canada bass fishing to the Canadians and will take my fun anytime on the old Shenandoah. May it run forever!

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## SOUND MANAGEMENT IS THE ANSWER

(Continued from page 5)

taken from animals killed by hunters. Through the use of the above information we can set hunting seasons and bag limits which will permit a safe annual harvest.

Virginia, like other states on the Atlantic seaboard, is continually losing waterfowl habitat as more and more lands are drained for new developments. Some existing habitats, such as our famed Back Bay waterfowl area, appear to be less productive of valuable duck foods due to pollution and/or other undetermined factors. A long-range study of Back Bay, designed for completion in 1961, has been initiated in cooperation with the state of North Carolina and the U. S. Fish and Wildlife Service and it is hoped that we will soon be in a position to solve these important problems. At the present time we are maintaining refuges and/or public waterfowl hunting areas on Commission-owned lands such as Hog Island in Surry County, Saxis Marsh in Accomack County and Mockhorn Island in Northampton County. Additional, strategically located areas are needed.

In recent years the mourning dove has become one of our more important game species. In cooperation with other southeastern states, research is being conducted in order that we might have the "know how" to maintain or increase current populations.

It appears that Virginia has always been plagued with a multiplicity of squirrel hunting seasons based more on opin-

ions than on biological facts. The fact that we are probably not harvesting the annual surplus does not by any means justify the waste of a resource. This waste occurs when adult female squirrels are shot in the early fall when they are suckling young of the fall litter. October 1 is the earliest possible date on which squirrels should be hunted and October 15 is preferable.

Studies are being conducted to formulate workable solutions to problems created when certain game species become nuisances due to their damage to crops and livestock. There is need for effective repellents to prevent crop damage by deer and beaver, and bear damage to livestock constitutes a serious problem in some localities.

Sound procedures are necessary in our administration of Virginia's growing number of shooting preserves in order that they may serve the purpose for which they were intended. We also feel responsible for the encouragement of interest in hunting dog field trials since this is still another means of utilizing the wildlife resource for the purpose of providing wholesome recreation. These are the major objectives of your Commission's game division.

Sound management is the answer to our sportsmen's immediate outdoor recreation needs and the assurance that this great wildlife resource will be preserved for future generations to enjoy.

*"I Felt Lucky to Get Home At All!"*

## Not the Fishing but the Going and the Coming!

By ROBERT G. HOFFMAN

*Manassas Park, Virginia*

FISHERMEN often brag about their good fortunes and seldom make reference to the many trips when their catch ran to naught or when misfortune took the place of good luck. One of the most remarkable trips of my lifetime was last year's fishing jaunt with my wife and five children into the big woods of Ontario during the first two weeks of August. It was this way:

July 31: Received speeding ticket in Maryland.

Aug. 1: 3:00 a.m.; out of gasoline in lower New York State.

2:00 p.m.; caught in 5-hour traffic jam out of Toronto, north, made 20 miles.

Aug. 2: Blew out a boat trailer tire, halfway between Kapuskasing and Hearst, Ontario. Had no spare, and it was Sunday afternoon. I drove 40 miles to Kapuskasing over dirt road, shopped around and finally found a Frenchman who had tires. He couldn't speak English and I couldn't speak French, but I finally managed to buy a set of tires and tubes for \$25.

On the way back to my trailer, a passing car threw a stone through the windshield of my station wagon.



Commission Photo by Kesteloo

"We finally arrived in camp and set up tent on the shore of Lake Nagagamis. It rained Sunday night and my tent leaked terribly. We all got wet."

We finally arrived in camp and set up tent on the shore of Lake Nagagamis. It rained Sunday night and my tent leaked terribly. We all got wet.

Aug. 3: At breakfast time, after a miserable rainy night, we discovered four dozen eggs we had bought along the way were all rotten. We ate soggy pancakes for breakfast.

We went fishing after awhile, and a fellow in a boat next to me landed an 18½-pound great northern pike. I caught two or three small ones.

After catching a small pike and removing the plug from his mouth with my \$5 fishing pliers, I had a lapse of memory and threw my pliers into the lake and dropped my catch into my tackle box.

During the balance of my stay at the lake, I managed to get third-degree burns on my left hand from burning grease, split my aluminum boat in two places on the rocks, lost a propeller four miles from camp, broke a paddle, and caught few fish.

I also took my wife boat riding, got caught in a rain and wind storm. We battled four-foot waves for a couple of hours and finally got into camp. She won't boat ride with me any more.

Now for the trip back:

Aug. 13: After driving about 250 miles, the wheel bearings in the boat trailer apparently ran dry of lubricant and froze. I dragged the trailer for awhile without knowing this and ruined my tires, tubes and one wheel. I had to camp overnight along the road.

Aug. 13: I drove about 400 miles looking for a wheel for the trailer and finally found one in Timmins. I took it back to the trailer and found that it wouldn't fit. I traded the wheel at the nearest town for a set of car-top boat carriers, gave the trailer away and started for home. With me, my wife, five children and everything we could load into the wagon, plus the boat on top, we were probably a pretty ridiculous-looking party. I know we drew lots of stares and smiles as we rolled along.

I was detained at the exit gate by Canadian customs for two hours. Those boys just wouldn't believe the truth when I tried to explain the whereabouts of my missing trailer. They finally let me go, because they had no way of checking my story.

Finally, on Sunday, August 16, within 100 miles of Manassas, my home, I sideswiped a tractor trailer at Romney, West Virginia. Damage to my 1959 station wagon was \$99.41, and I carry \$100 deductible insurance.

I sure felt lucky to get home at all.

## *Bird of the Month:*

# *The Carolina Chickadee*

By DR. J. J. MURRAY  
*Lexington, Virginia*



**T**HE Carolina chickadee is one of our smallest birds. It appears larger than it really is because of its fluffy feathers and its long tail. Its body is not as large as the first joint of a man's thumb. It weighs only about 10 grams, which is just a little more than nothing. To be sure, at less than three grams a ruby-throated hummingbird is still smaller, but the difference between three grams and 10 is not much. Since the average bobwhite quail weighs around 180 grams, it would take 18 chickadees to balance one bobwhite on the scales, and a bobwhite is not a large bird at that.

However, this little bird makes up in energy what it lacks in size. It is a little ball of vitality, with hot blood, a rapid heart beat, and a high metabolism, or transfer of food into energy. Inquisitive, restless, always on the move, it almost tires a man just to watch a chickadee. This tiny bird is so well clothed and it manufactures energy so rapidly that it can stand temperatures that would punish a man.

Some of us last Christmas took a Christmas bird count high up on Middle Mountain in Highland County. It was only eight above zero when we started out. We walked in three to six inches of snow all day. On Sapling Ridge the wind was whistling. As we expected, birds were very few. The wife of one of the men said that the birds had more sense than the birders. But chickadees were everywhere, having the time of their lives. We only found 169 birds in all in that high country, and 63 of these, or over a third, were chickadees. These chickadees of the high mountains were not Carolina chickadees but the very similar black-capped chickadees.

There is little noticeable difference between the Carolina chickadee, which is the more southern form, and the black-capped. Both have shiny black caps and throats, ashy upper parts, and white on the underparts and sides of the head. The northern bird has a slightly longer tail and heavier white edgings on the wings. The songs, too, are different, the northern bird giving a two-syllabled whistle, while the whistle of the Carolina chickadee consists of three or four notes. The "chick-a-dee-dee" note, which is a call rather than a song, is harsher in the northern bird. The northern bird nests in Virginia only on the highest mountains.

If you will watch a pair of chickadees in mid-April, you may see them going into an old woodpecker hole in a fence post or dead limb. If with a mirror you throw light into the hole, you may see six or eight white eggs, heavily spotted at the larger end. If you see tiny young in the nest, do not stay there long, as the parents are too busy filling six or eight big mouths to be patient with visitors.

Chickadees have little or no fear of human beings. They can be trained to take food from one's hand. Dr. Maurice Brooks of the University of West Virginia once showed to a Virginia bird group pictures of chickadees lighting on his head to take food out of the crown of his hat and out of the bowl of a pipe which he held in his mouth. They are always glad to share the suet on your feeding tray.

## VIRGINIA WILDLIFE

# CONSERVATIONGRAM

Commission Activities and Late Wildlife News . . . At A Glance

VIRGINIA BIG GAME TROPHY CONTEST DETAILS ANNOUNCED. The following tentative outline of the Old Dominion's 1960 Big Game Trophy Contests has just been released by Supervising Game Biologist J. E. "Ned" Thornton of Harrisonburg:

Class A--Deer: Group 1, 9 points or more; Group 2, 7 and 8 points; Group 3, 6 points or less; Group 4, bow and arrow. Class B--Bear: Any bear taken legally during the 1959-60 hunting season.

All trophies entered must be legally-killed game for the 1959-60 hunting season and must be accompanied by the state big game tag. Trophies must first be entered in the regional contest for which they are eligible. Top winning trophies must be entered in the state contest.

Regional contests: A--Eastern Contest, sponsored by the Peninsula Sportsmens Association of Newport News. The contest will probably be held on October 15 at the Magruder School in Newport News. Entries must be in the hands of the judges not later than Friday, October 15, at 6:00 p.m. Details may be obtained from E. N. Vandebree, 41 Sinton Road, Newport News. B--Western Contest, sponsored by the Harrisonburg-Rockingham County Izaak Walton League Chapter, Harrisonburg. The contest will be held on October 27, 28 and 29 at the William G. Myers Armory in Harrisonburg. Entries must be in the hands of the judges not later than Friday, October 29. Details may be obtained from Raymond Carr, 394 N. Liberty Street, Harrisonburg.

State Contest, sponsored by the Virginia Commission of Game and Inland Fisheries. This contest will be held in Harrisonburg on October 29 in conjunction with the Western Regional Contest. Only winners in the regional contests will be eligible for entry.

Prizes: Sponsoring organizations will provide prizes for regional and local winners. The game commission will provide suitable prizes for all first place winners and certificates for the top five winners in each class.

A ROSTER OF VIRGINIA COMMISSION OF GAME AND INLAND FISHERIES PERSONNEL--1960 is now available free of charge from the Commission at P. O. Box 1642, Richmond. This new, 12-page, buff digest lists the name, address, and, in most cases, the telephone number and work area or district of every game commissioner and salaried employee, including all game wardens. Also listed for convenient reference are the names and addresses of 19 related agencies.

GAME COMMISSIONERS I. T. WALKE, JR. OF NORFOLK, FROM THE SECOND CONGRESSIONAL DISTRICT, AND DR. E. C. NETTLES OF WAKEFIELD, from the fourth congressional district, have been reappointed to the Commission by Governor Almond, their new six-year terms to expire on June 30, 1966. Dr. Nettles is an 18-year veteran on the Commission, while Walke has served as commissioner since 1954.



The western slope of Mt. Rogers typifies the vast forested area that surrounds this highest point in Virginia.



Southern balsam or fir make perfect Christmas trees as seen in the foreground of this view of Mt. Rogers from the eastern slope.



The lush vegetation found on Mt. Rogers includes this spineless blackberry.



Wild azaleas bloom in massive profusion on the slopes of Mt. Rogers in early June.



Big shelf fungus decorate moss-covered trunks and logs in the balsam forest on Mt. Rogers.



Jock-in-the-pulpit is commonly seen growing out of the thick, wet forest floor.



A fairyland of fern, lichen, and moss carpets the forest floor.

On top of old . .

# Mount

## Highest Point

Text and Photo by

Mt. Rogers, straddling the Smyth-Grayson county line, at 5,720 feet, is the highest peak in Virginia. Shrouded with wet, heavy fog, this hermit mountain has been a part of Virginia of prehistoric times. Its igneous rock, commanding the intruder to tip-toe across the forest, commands the intruder to tip-toe across the forest, commanding the intruder to tip-toe across the forest. Named for the mountain still carries the local name of "Baldy". Southern balsam caps the mountain, making it unique. Other states' high points, Mount Rogers is selected as the most of the high country on Mount Rogers is reserved for research, recreation, and as a laboratory. Early in this century, lumbering operations were common in the area, leaving only a small strip of virgin forest. The Cherokee Indians on the slopes of this wild mountain have long gone, but the old hermit mountain still hides in

# Rogers

## In Virginia

George H. Harrison



Door of the balsam forest atop Mt. Rogers.

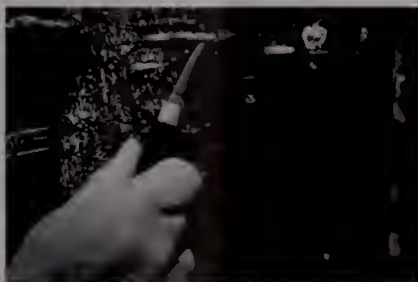
erty line in the southwestern corner of the Old Dominion. Like an island in the sky, it overlooks a wilderness much like the Vir- ure is covered with an enchanting rain this fairyland of virgin fir, lush moss, deli- n Barton Rogers, a geologist, in 1883, the " The most northern stand of southern fir among the forests of Virginia. Unlike many mentioned and rarely visited. Fortunately in the Jefferson National Forest, thus pre- nonument to the Virginia of Daniel Boone's moved almost all of the fir and spruce in r. Buffalo and elk were once hunted by s mountain. Today, the elk and buffalo are st wilderness precious to modern Virginia.



From the Elk Gardens grassland to the southwest of Mt. Rogers, the dark balsam forest outline can be seen on the mountain above.



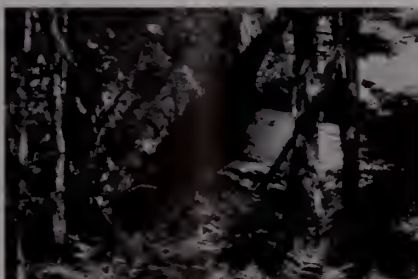
When buffalo roamed Mt. Rogers, this willow covered three-quarters of an acre in the Elk Gardens area. Now only a small dry spot remains for the cattle that graze there.



The "old timers" still take the gum from the balsam blisters to cure kidney ailments.



Mama skunk carries junior to safety early one spring morning on Mt. Rogers.



The igneous rock on Mt. Rogers is very old. This was a World War I deserter's hideout.



Bear claw marks can be found on several trees in the Mt. Rogers area.



Deer are strongly attracted to salt, but whether or not deer actually have to have salt is unknown. A salt lick on the Commission-owned Gathright Wildlife Management Area (above) was popular with the whitetails this summer.

## Salt as a Game Management Tool

By ROBERT H. GILES, JR.

*Former District Game Biologist*

Commission Photos by Kesteloo

**V**ISIT any hunting camp, talk with any sportsmans group about wildlife, and sooner or later the subject of salt will arise.

"Would putting out salt for deer be worthwhile?"

"We've had out a salt lick for years. We never shoot over it, of course—we just like to see the deer."

"I'll bet the fellows over on the creek have a block of salt at every deer stand!"

Questions and statements such as these are to be expected, some of the fears are justified, and many false notions are prevalent. Let's examine critically the use of salt as a game management tool.

Each year, approximately 25 tons of salt have been used to establish salt licks on the two national forests in Virginia. Both block and granulated forms of rock, iodized, sulfurized, and, more recently, trace-mineralized salt have been used.

Salt has been used in game management work because: (1) it satisfies an apparent desire or physical need; (2) it tends to attract deer from roads, fields, and orchards where they could do agricultural and other damage; (3) it attracts deer from livestock areas where disease exchange might occur; and (4) in areas of critical (poor) browse conditions, placement of salt may influence deer distribution with respect to where they feed. Unfortunately, much of this reasoning is only theoretical. Some research is being done on the validity of these ideas in other states, but more research is necessary if the real effects of salt are to be discovered.

There has always been some concern that salt put out by game managers to benefit game may have exactly the opposite effect. Stanley P. Young, in the *Deer of North America*,

reports that Indians baited deer with salt when it was available. The literature on game law enforcement is full of accounts of the use of salt to take game illegally. The *Game, Inland Fish and Dog Code of Virginia* (Sect. 29-143) states that it is "unlawful to occupy any baited blind or other baited place for the purpose of taking or attempting to take any wild bird or wild animal or to put out bait or salt for any wild bird or wild animal for the purpose of taking or killing the same . . ."

In an environment of efficient game law enforcement and general public support, the chances for killing deer at salt are slight. Deer use salt the least during the fall and winter. Thus, hunter impact on salt-using deer is very limited.

Salt has been considered primarily a tool of big game management. F. T. Kindell, in 1957, described the use of salt in Idaho for elk management. The primary purpose of its use there was to draw elk off their winter range earlier and faster than normal in the spring to prevent destructive overuse of food plants on the winter range. Most studies have failed to find evidence supporting the effectiveness of the use of salt in influencing big game movements, however.

In *The Deer of North America* is found the statement that salt is not useful in shifting deer from one area to another but may have value in distributing or holding them within their home watersheds. It is within the watershed that attempts are made to exert some control over deer on Virginia's national forest lands.

On the George Washington National Forest, the effectiveness of salt in holding deer from a hazardous crossing was apparent from figures reported by former Game Manager

Golden B. Smith. In an area in the western part of Rockingham County, the number of deer killed by automobiles on a main highway bisecting the wildlife unit dropped from 14 in 1946 to one in 1950. Complaints of crop damage by farmers dropped from 12 in 1944 to none in 1950 in the same area. This decrease in highway deaths and deer damage complaints occurred in the face of a rapidly expanding deer herd. Actually, a considerable amount of habitat improvement was being done in the same general area, so the use of salt was not the only reason for this decrease in deer mortality and crop damage. It is felt that judicious use of salt did contribute to this desirable trend, however.

Aldo Leopold, in *Game Management*, reports a similar incidence in which salt was effectively used near a road to reduce road kills on a 25-mile stretch of road from two deer per mile to one deer per three miles per year.

The U. S. Forest Service Handbook of Region 8 (2634.5, 1958) states that the value of salt as a game management tool has not been clearly demonstrated and that, unless it has been demonstrated to be locally effective in controlling game distribution or in serving some other useful purpose in game management, its use is to be discouraged.

Olaus J. Murie, in *The Elk of North America*, implies that use of salt is a conditioned response, that is, one not inherently the elk's. Salt is sufficiently abundant throughout nature to satisfy the chemical needs of the elk. This is undoubtedly true for deer on some areas, for many herds thrive where there are no known salt or mineral licks.

Discussing salting of domestic livestock, Murie says that specialized breeding of cattle for particular traits and purposes has undoubtedly caused certain metabolic changes. Salt has been shown to be unnecessary for all cattle, although some use

slightly over two pounds per head per summer month. Obviously, livestock cannot be strictly compared to wild game.

Deer are strongly attracted to salt, though their regular use of a lick does not start immediately. Two months were reportedly required in Ohio for deer to use licks. Heavy use of Virginia licks follows a similar pattern, though no time information is available. Evidence that bucks seldom use licks further supports the theory that salt is more desired than needed.

Field observations of salt blocks indicate little direct use of the block but considerable consumption of the earth under and around the block. Murie mentions the need for feeding pure salt because the elk have to consume so much earth to get the supposedly required amount of salt from a natural lick. Game managers, not getting expected use from salt blocks on range with heavy deer populations, crumble the blocks, increasing infiltration of the salt into the soil. Greatly increased use has resulted. Most licks are established near stumps or on cut-off saplings. Within one year of use, by deer averaging one deer per 60 to 70 acres, these stumps have much of their root systems exposed by deer's consumption of the salty soil around them.

A Potts Mountain (Alleghany County) game-manager-established lick has resulted in a hole dug into a slope by deer pawing and licking the ground. Continued use has resulted in a slick and "greasy" overhang to the hole where deer rub their heads and necks inserting them to get the mineral.

That use does not indicate a need but a desire for salt is well illustrated by Murie (page 312): "If one put out a sugar lick in a town, the children would gather as others would for wine, beer, or tobacco though one could not hope that this would be wholesome for them."

As with many techniques of wildlife management that have not been satisfactorily evaluated, salt is used in "desperation." Most management tools are used to suppress or eliminate certain factors that limit increases in game populations. Salt is used on the theory that this is one possible wildlife need or desire that can be easily and economically met. If it is beneficial, we are successful in its distribution; if it is not beneficial, we have lost little.

We need much more knowledge of this centuries-old technique of salting just as we do for many other techniques of forest game management. Do deer actually *have to have* salt? What other forms of wildlife are benefited by consumption of salt? What is the optimum quantity and pattern of salt distribution? What are the types of salt most preferred and needed? What influence does salt have on deer concentration and what are the potentials for disease transmittal in such areas? Can salt influence distribution and movements? What are the total effects of salt on plants and animals as it leaches through the soil into waterways? The answers to these problems can be gained by thorough research, critical field observations, and the cautious and planned continuation of the technique.

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#### Peters Memorial Nature Trail Begun by Walton League Chapter

The Arlington-Fairfax Chapter of the Izaak Walton League of America has begun a nature trail as a memorial to the late P. O. "Pop" Peters of Arlington, chapter president for two years and state division president in 1953-54. Al Schmidt is in charge of its construction.



Field observations of salt blocks indicate little direct use of the block but considerable consumption of the earth under and around the block. Above, a typical salt block installation at Camp A. P. Hill is checked by Sgt. Roy Johnston.

## Be Careful, Fishermen!

By HENRY H. GRAHAM

*Twin Falls, Idaho*

**O**RDINARILY, fishing is not considered a dangerous sport, nor is it. But things *can* happen to an angler, and it is well to know some of the perils to avoid.

Perhaps more boat fishermen come to grief than those who fish lakes and streams from the shore. This is because people are known to go out in boats that are leaky or unsafe for some other reason, get caught in storms, and do foolish things such as rocking the craft. I have known men to use boats that were too small for rough water. Result: swamping. Boats should be of sufficient size and in good condition before being used. Some boats are not kept in good repair, little or nothing being done to them from year to year. Everything wears out in time.

One day a man of my acquaintance, fishing for perch from the bank of a large reservoir, was having no luck. Nearby lay an old, weather-beaten rowboat and a paddle. He thought his luck might be better some distance from shore, so, over the vigorous protest of his companion, he went out in the decrepit, leaking craft. In spite of his rapid bailing, the boat sank in 10 feet of water, and, being unable to swim, the chap promptly drowned. His fishing buddy could not swim either, and was forced to look on helplessly. No careful, experienced boatman would even have thought of venturing out on the water in such an unseaworthy old tub.

It is a good idea for fishermen to carry emergency food supplies in the boat so that, if a bad storm comes up, they can go ashore, turn the craft on its side as a windbreaker and wait for the gale to subside. If they have plenty to eat, they won't suffer too much even if they have to wait a long time.

Another mistake that boat fishermen sometimes make is to try to reach the dock or other starting point when a big wind arises suddenly. The proper procedure is to head for shore when the waves grow large and remain there until the wind dies down. Many anglers have been drowned or at least experienced great difficulty because they stayed out on the ocean or lake in a big blow. No fish is worth taking chances on one's life.

Stream fishermen can have trouble, too. Many sporting trout streams have silty bottoms and banks. One may easily plunge almost out of sight in this soft stuff. Tragedy may even ensue if help is not at hand. Several times I myself have slipped into the silt when alone and was barely able to extricate myself after a terrific struggle. Once I never would have gotten out of the gooey mess had I not been able to seize a willow branch overhead and pull myself to safety.

Not long ago a woman of my acquaintance was fishing a beautiful trout stream known for its silty banks. Her companions warned her of the danger, but she just laughed it off,



Commission Photo by Kesteloo

Fishermen who angle for smallmouth bass in the James River near Richmond may step off of rocks into water over their heads or be caught by flash floods.

saying, "Oh, don't worry about me. I will be all right."

Hardly were the words out of her mouth when she almost disappeared in the muck, going in nearly to her ears. Fortunately, aid was nearby and she was pulled to safety. You may rest assured that, badly scared, she exercised extreme caution in the future.

Stream banks undermined by beavers can be a source of danger, too. Sometimes these traps are covered almost entirely with luxuriant grass and thus are invisible. One may easily break a leg by falling into such subterranean apertures. It is advisable to be on the lookout for quicksand, too. Many streams have such beds, the sand of which they are composed being so well-rounded that the grains do not mesh as does most sand. One caught in quicksand sinks steadily, and the more he struggles to free himself the deeper he settles.

Fishing swollen brooks and rivers early in the season also poses its dangers. Not only can the high water itself be a menace, but at this time of year there is usually much debris such as floating logs. A friend of mine once was bowled over by a giant log and knocked unconscious for a few seconds by a blow on the head. Luckily, he came to in time to avoid drowning, but all fishermen are not so fortunate. Some have drowned as a result of such accidents. Since then my friend makes a habit of watching behind him when fishing streams during the early runoff. Even the biggest logs usually drift noiselessly, giving no hint of their approach. Some are so water-logged that little if any of the wood shows above the surface of the stream.

Waders have been a wonderful boon to the fisherman who likes to get in deep. But they, too, have their dangers. A man with whom I go fishing a lot was wearing a pair of these when he slipped on a rock and lost his balance. The waders promptly filled with water, dragging him down with many pounds of extra weight. Unable to regain his footing he rolled more or less helplessly along the bottom, into a deep pool and out of it. As the water below was shallow he was able, by dint of hard struggling, to get to his feet and go ashore. But it was a narrow squeak and a harrowing experience that he will never forget. Had the water been deep for a long distance, he would probably never have made it.

"I was scared spitless," he told me, "and figured I was done for."

Stones on the bottom of a creek are often very slick. Waders and boots get slick, too, in time, losing the grip they had when new. It is well to discard worn boots and purchase new ones. The latter may help to save a life in an emergency by providing sure footing. If one slips he may strike his head on a rock, knock himself out and drown.

Many men, including myself, are fond of fishing alone far up lonely little tributary brooks where there may not even be the faintest sort of a trail. In such remote spots a sprained ankle or injury of some other kind may be really a threat to life if there is a long way to go. When alone one should exercise the utmost caution to avoid mishaps, making sure of his footing and keeping completely away from ledges and cliff-sides. Precaution may be the difference between life and death. Once I twisted my ankle badly when off by myself in a lonely canyon. Getting back to the car was one of the most painful ordeals I have ever experienced. But suppose I had broken a leg? I might never have written this article!

It is a sound idea for fishermen to carry with them a small kit composed of disinfectant and bandages. It may come in handy. It is advisable, also, to carry a snake bite kit when in country infested by rattlers or other venomous reptiles. Such

kits are readily available and fit neatly into the pocket. They contain everything needed for the treatment of snake bite although after using them no time should be lost in seeing a doctor. In spite of what you may have read on the subject, snake bite can be very serious. When in snake country one should be careful where he puts his hands and where he steps. Snakes are most commonly found on rocky ledges. They are also encountered in brushy places. Rattlers are especially fond of sunning themselves among rocks. It pays to be vigilant.

One stream with which I am familiar has about as many rattlesnakes on its banks as trout in the water. When fly fishing this creek anglers wade constantly, almost never going ashore except in the beginning and at the end of the trip.

Fishing is a great sport—one of the best. But when you're out whipping your favorite pool, be careful and use good judgment. There is no point in taking foolish chances.

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### Low-Cost Sea Water Conversion Process Developed

A new process for extracting drinkable, useful fresh water from salt sea tides anywhere in the world, invented by a brilliant Israeli scientist, Dr. Alexander Zarchin, represents the first practical breakthrough against the increasingly urgent problem of water shortage throughout the world.

Critical tests by the inventor and his colleagues as well as an intensive study which top engineers made at a closely guarded laboratory in Israel give assurance that the process is capable of mass-producing water at amazingly low cost. In full-scale operation, and using special equipment, costs are expected to rival even present costs for obtaining ordinary fresh water from normal sources.

For long years men have experimented with the possibility of drawing potable water from the sea. A number of methods have been developed, but so far all involve costs which would be prohibitive for mass use. The most favorable now in use requires an expenditure of well over a dollar to gain 1,000 gallons. This is in contrast to the estimated average cost of 40 cents per thousand gallons of natural fresh water drawn from well sources in various parts of the U.S. The 40 cents has become both a standard and a goal for chemists and engineers working on desalinization programs.

In 1958 Dr. Zarchin obtained patents in the U.S. and several other countries on a basic process of desalinization by freezing. While it was a valuable contribution, it was judged by Dr. Zarchin himself as well as others to have certain limitations.

Even before the patents were issued, the Israeli scientist had begun work on a new method. His latest breakthrough is still being kept a secret from the world at large.

At this time, only the following can be revealed about the new process. It, too, involves freezing of water piped in from the sea and the effective separation of the frozen crystals of pure water from the residue of salts and natural sea chemicals.

Considerably advanced in concept over earlier theories, the new process requires ingenious new equipment. Nevertheless, it is dramatically simple in operation and requires low energy input for production.

It should produce water at a cost of somewhat less than 40 cents per 1,000 gallons—the goal and standard of all modern research. Experience over the long run may achieve further cost reduction.

—DAVID KARR, *President*  
*Fairbanks Whitney Corporation*



By C. H. "KIT" SHAFFER

*Supervising Game Biologist  
Lynchburg, Virginia*

CHRIS was a crazy, mixed-up dog. His mother was a liver and white springer spaniel and on the paternal side he was an English setter. Individually, the two breeds are somewhat specialized. Setters are usually bred and trained to locate, point and retrieve quail and grouse, whereas the springer is used in the midwest and northern parts of the country for hunting ring-necked pheasants and occasionally for waterfowl retrieving.

Every sportsman in Virginia is familiar with the qualities of a setter which make it such an outstanding companion in the field, but the springer breed is more or less foreign to Virginia's hunters. Actually the springer excels in working dense cover thoroughly and in flushing the game for its master close enough for a shot. These dogs are usually outstanding retrievers. They derive their name from their habit of springing through thick vegetation.

Chris then had two strikes against him from the beginning: even though his parents were outstanding in their own fields, he could never quite decide whether to excel in the traits of his mother or his father, and too often he exhibited the qualities of neither. On rare occasions when he was a puppy, and even later in life, he would point quail. More frequently, however, he would catch their scent, ground trail them and then with great speed flush the covey—always out of gun range of his master. Naturally, under the circumstances, not many hunters wanted Chris along on a bird hunt, to say the least.

This is a true story. The loss of "Chris" was considered a blow to game biologist Herman J. Tuttle's foreign game introduction project as well as to biologist supervisor Shaffer's family.

On several occasions Chris was taken to the mountains in search of grouse, hoping that this might be his forte. Here, as with quail, he was a dismal failure—he seemed to take great delight in finding and then running every bird off the mountains. One day he flushed 12 grouse without even a shot being fired. Chris was without a doubt the best quail and grouse conservation dog in the state of Virginia.

Even though his springer mother was an outstanding retriever who would swim any body of water to proudly bring in a mallard or a "woody," Chris steadfastly refused to retrieve anything. He appeared to be thoroughly bored with his master's efforts to train him in the art of retrieving. He much preferred to run and flush. Thus, in the retrieving department he was also a dismal failure.

Chris dearly loved to jump a deer or a rabbit and run it at breakneck speed until he would lose both the scent and the animal. Here again he was no competition for a beagle or a black and tan because he refused to bark on the chase. He was a silent, swift trailer who more than once had run a buck over a non-suspecting stander. Years ago someone called him the "white ghost of the Piedmont," and somehow the name fitted him.

The closest Chris had ever come to doing anything right in the hunting line was on turkeys. We have often heard that in order to be an avid turkey hunter one has to be a trifle peculiar, so we assume the same thing might be said of a turkey dog. They are usually inclined to be wide-ranging, speedy, wild, hard-to-handle dogs who prefer to hunt the big woods.

Chris fitted into some of these categories, and ordinarily if there were turkeys in the territory where he ranged, he would spontaneously flush them. Here again, however, he never quite measured up because he refused to bark on the flush. (A turkey dog that won't bark is in the same category as a gossip who can't talk, or a fish that refuses to swim.) Too often he messed up the details for more capable dogs by flushing the turkeys out of shooting and seeing range. Thus, Chris failed in another form of hunting, even though his little five year old master did not agree. When anyone asked what breed of dog Chris was the little fellow invariably answered, "He's a turkey dog!"

Chris, not unlike many humans, had numerous other failings, but at the same time, he had many desirable traits. He was wonderful with children, an acceptable watch dog, and just plain pleasant to have around. All the same, at five years of age, Chris was far from being a credit to the sporting dog kingdom. He had just about worn out the patience of his master and too often had to be apologized for. In other words, he was a failure, a misfit, and inadequate at every kind of hunting.

Then three years ago biologists of the Virginia game commission began experimenting with Iranian black-necked pheasants. After successfully crossing these exotic birds with Imperial valley ring-necked pheasants in captivity, release areas were carefully selected. Eventually quantities of these new birds were turned loose, primarily in release areas in Charles City and Halifax counties. Up to this time literally thousands of regular ring-necked pheasants had been released by sportsmen annually throughout the state. Almost without exception these well-meaning releases had ended in dismal failures.

Following these new releases carefully, the biologists could only hope that these exotic birds might possibly be different. Perhaps someday they might become established to eventually become part of the fauna of Virginia.

It was a necessity for the biologists to check the release areas frequently in order to ascertain survival rates and dispersal distances of these new birds. From the start it was apparent that the observations on the "blacknecks" would be difficult. Both sexes of the birds readily sought out the thickest, heaviest cover available in the range and they were extremely difficult to flush from the cover. Furthermore, the cock birds were inclined to run like race horses away from the observers, whereas the hen would on occasions squat and allow the biologists to walk over them without ever flushing.

Walking the range, hoping to flush these pheasants was found to be an unsatisfactory censusing technique at best. Good bird dogs were tried on these new exotics, but obviously the dogs were confused by hunting these birds that would not "freeze", but were inclined to run away from the first sign of danger.

Inadvertently Chris was one day carried into the Halifax release area. The results were amazing! Almost immediately pheasants began pouring out of brush piles, honeysuckle thickets, bulldozed wind rows in the wake of the "white ghost." No cover was too thick for him, and if he once caught scent of the bird it wasn't long before it was off the ground and recorded on the biologist's tally sheet. Here was something that Chris understood—he could flush and run to his heart's content and not be reprimanded for it. With apparent delight he would flush the squawking cock birds and invariably would run them as long as he could see them. He flushed 26 pheasants that first morning he hunted for them. He was taken into

the Charles City area later in the winter and there flushed 36 "blacknecks" out of one grown-up drainage ditch.

Seemingly overnight Chris became an essential part of the biologist censusing team. They knew that if there were any pheasants on the areas that Chris would eventually find them. He demonstrated his true worth over and over again, and gradually evolved from a failure as a hunting dog into the hero of the foreign game program. Chris had finally found his niche!

He was kept in the kennel during the first breeding and nesting season when numerous nests and broods of young pheasants were observed and reported. With the coming of fall, Chris was again called into service to help evaluate the success or failure of the exotic bird releases. Hunting on two farms last fall, one in Campbell and the other in Halifax, Chris flushed 38 pheasants. Several weeks later in the Charles City area he helped to flush and record 52 birds in six hours. The results were most intriguing and gratifying to the biologists since they indicated that large numbers of the new black-necked pheasants had reproduced and survived under wild conditions. The biologists were justly proud of their pheasant flushing dog who had assisted so materially in collecting this encouraging data.

On a cold miserable rainy day in January Chris reached his zenith. In exactly two hours of furious hunting he flushed an unbelievable total of 91 pheasants out of the cover on the Halifax area. At the end of this period everyone was amazed at the results; it was almost inconceivable that this dog could locate so many birds in such a short time. Chris and the biologists were thoroughly drenched from the freezing rain, but intoxicated with success, they kept hunting for pheasants. First the expansive Brookneal area on the Staunton, and finally, almost at dark the spacious Long Island release site. Additional "blacknecks" were located at every stop.

It was perhaps bitter irony that soon thereafter Chris contracted an unknown illness. Regardless of constant care it soon became apparent that he had flushed his last pheasant. Chris had had the distinction of being the first dog in Virginia to "count pheasants" and to fully test the sporting qualities of our newest potential game bird. Who can now say that he was a failure?

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### **Fishermen "Go Wild" at Lake Nelson Opening Day**

Lake Nelson, the new 45-acre public fishing pond near Arrington in Nelson County, may not be stocked with flying fish, but the fish were certainly flying on opening day (June 29) as over 1,000 anglers caught more than 3,500 fish.

The new pond is constructed for easy and efficient fertilization, and, for this reason, it may become the most productive freshwater impoundment in Virginia.

"Of course the fishing success there won't always be as good as it was during the opening days," said Bob Martin, assistant chief of the game commission's fish division, "but we should get high production through fertilization."

"The bass fishing will drop some as the surplus population is taken off, but the bream fishing should remain good."

The new lake is unique in two ways. First, the bottom was cleared before flooding, so that when the pond is drained, seines can be used effectively in taking out the rough fish. Secondly, the pond was built in an area with a relatively small watershed. Therefore, the flow of water will be slow enough for effective fertilization.



### Wardens Prepared For "Safe Boating Week"

Virginia's state game wardens were suitably prepared for the fourth annual National Safe Boating Week, July 3-9. Some 54 members of the commission's warden force—those having a good deal of water to patrol—were given intensive training in boat handling, seamanship, navigation, boarding and inspection, safety, first aid, boat law, and public relations at a Commission boating school held June 26-30 at Camp Pickett through the courtesy of commanding officer Lt. Col. W. C. Huber and the Second United States Army.

Instructors included U. S. Coast Guard Auxiliary members Hamlet Funai, Jack Epps, Forrest Brauer, John Lydiatt, Day Lowry and Dr. W. C. Hancock, University of North Carolina lawyer Dexter Watts and Sgt. Holcomb of the State Police Training School at Richmond.

At this meeting it was announced that all game commission vessels used for boat law enforcement will fly the state flag and have the words "Virginia Patrol" painted on their bows, and that all wardens shall be in uniform when on boat law enforcement duty.

### Davey Named Game Commission Staff Assistant

Stuart P. Davey has been named staff assistant to executive director Chester

Phelps by the Commission of Game and Inland Fisheries.

Davey, a commission employee since 1953 and assistant chief of the Commission's education division since July 1958, has been placed in charge of coordinating



Staff Assistant S. P. Davey

inter-division projects. He is now working practically full-time on the Virginia boat registration program.

M. Rupert Cutler, acting assistant chief of the education division, has been named information officer and will head the division's newly-created information section. Cutler's position on the *Virginia Wildlife* magazine staff has been changed from associate editor to managing editor.

George H. Harrison, formerly information technician stationed at Blacksburg (1958-1959), and recently photographer-writer for *Virginia Wildlife* magazine, was named assistant information officer

and is slated to spend much of his time on boat safety information activities.

Davey is known throughout Virginia for the deer research and management work he directed while game research biologist (1953-1957). He later coordinated numerous education division projects and recently conducted a six-month survey of conservation information needs. During the recent session of the General Assembly, Davey assisted Phelps during hearings before House and Senate committees.

A Navy veteran (1943-46), the new staff assistant holds B. S. F. (1952) and Master of Wildlife Management (1953) degrees from the University of Michigan.

Cutler, who received journalism training while earning a B. S. degree in wildlife management at the University of Michigan, has worked as a consumer publications writer for Argus cameras, editor of the Winslow Mail at Winslow, Arizona, and executive secretary of Wildlife Conservation Inc. in Massachusetts.

Harrison, graduate of Pennsylvania State University journalism department, did considerable wildlife photography with his father, Hal H. Harrison, noted writer, photographer, and lecturer, prior to joining the Commission.

### Fisherman Kills Rabid Bobcat with Stick

Special game warden C. B. Neff of Hot Springs reports that Vernon Harris,



Commission Photos by Harrison

These 54 members of the Commission of Game and Inland Fisheries game warden force attended an intensive, five-day boating school conducted June 26-30 at Camp Pickett (see above).

40, of Fordwick, Virginia, fought off and finally killed with a stick a large bobcat which attacked him while he was fishing on the bank of the Jackson River in the Gathright Wildlife Management Area on April 30. The state health department, after receiving the bobcat's head, determined that the 'cat had rabies.

### Shomon Attends European Battle Monuments Dedication Exercises

"The trip of a lifetime" is how J. J. Shomon, chief of the Commission's education division and editor of *Virginia Wildlife* magazine, described his personally-sponsored trip to Europe and the Middle East this summer.

Editor Shomon, extended an invitation by the American Battle Monuments Commission to attend the dedication exercises of a number of permanent U. S. military cemeteries and monuments in Europe, was on the program at the Margraten U. S. Military Cemetery in Holland on July 7, the cemetery he and his graves registration unit helped to establish—along with seven others—in World War II. He also participated in exercises in Luxembourg, Belgium, and France.

Following the series of cemetery dedications, Mr. Shomon visited Czechoslovakia, Austria, Greece, Egypt, Jordan, Israel, Italy and Spain, seeing historic sites and taking part in several planned conservation tours.

During his absence, Information Officer M. Rupert Cutler served as acting chief of the education division.

### Third Annual Virginia Salt Water Fishing Tournament Opened May 1, 1960

The Third Annual Virginia Salt Water Fishing Tournament, sponsored by the Salt Water Sport Fishing Association of Virginia, opened Sunday, May 1. Open and free to everyone fishing in Virginia waters, the Tournament runs thru October 31. Anglers capturing fish meeting minimum tournament standards will receive a handsome four-color wall plaque.

Seven new species, eligible for citations only, were added to the 1960 tourney, raising the total number of eligible species to 22. A newly designed citation for sportsmanship will be awarded to any angler who catches and releases a tarpon or white marlin unharmed, regardless of size. The seven new species added are: shark, bluefin tuna, yellowfin tuna, tarpon, king mackerel, false albacore (little tuna) and porgy.

The minimum weight for flounder has



Commission Photo by Harrison

Governor J. Lindsay Almond shows his pleasure at receiving "The Bird Watcher's Anthology" and an album of wildlife stamps from Virginia Wildlife Federation President Glenn R. Frum of Fairfax. Provided by the National Wildlife Federation, the books were presented to the governor last month in appreciation of his support of 1960 Wildlife Week. Game Commission Executive Director Chester Phelps, at right, was also on hand to give the governor an album containing the many letters the governor received last fall endorsing his campaign to promote the sale of "duck stamps."

been raised from five to six pounds and the minimum weight requirements for bluefish and white perch have been lowered, the bluefish from eight to six pounds and the white perch from 12 ounces to 10 ounces.

Minimum citation weight requirement for all 22 species of the 1960 Tourney are:

	Pounds	Ounces
Shark .....	100	
Bluefin Tuna .....	50	
Yellowfin Tuna .....	50	
White Marlin .....	50	
Black Drum .....	50	
Cobia .....	45	
Tarpon .....	40	
Channel Bass .....	40	
King Mackerel .....	20	
Dolphin .....	15	
False Albacore .....	15	
Striped Bass .....	12	
Bluefish .....	6	
Flounder .....	6	
Tautog .....	5	
Sea Bass .....	4	
Gray Trout .....	4	
Spotted Sea Trout .....	4	
Porgy .....	3	
Croaker .....	2	
Spot .....		14
White Perch .....		10

With the exception of the seven new species and minor revisions in minimum weight qualifications, the rules remain virtually unchanged from last year. All catches must be made on rod and reel and entered at one of the Tournament's 140 official weighing stations, located in the various fishing communities in Tidewater Virginia.

### Tolman Elected President of AACI

C. D. Tolman of the Colorado Game and Fish Department was elected president of the American Association for Conservation Information during the organization's annual convention held in May at Miami Beach, Fla. Tolman succeeds Wilbur Stites of the Wisconsin Conservation Department.

The AACI is composed of personnel of state conservation agencies concerned with information-education work.

Robert Calkins of the California Department of Fish and Game was elected first vice-president, Arthur W. Jorgenson of the Wisconsin Conservation Department as second vice-president and James F. Keefe of the Missouri Conservation Commission as secretary-treasurer. Named to the Board of Directors were: Chuck Griffith, South Dakota; Bob Dahne, Florida; Pat Whelan, Ontario, Canada; Will Johns, Pennsylvania; Cloyse H. Bond, Oklahoma; and Stites.

Nearly 100 delegates from 27 states including Virginia attended the annual convention in addition to representatives from several federal agencies and private conservation organizations. Topics for the meeting included audio-visual aids, roles of I & E personnel in the establishment of departmental policies, techniques in youth conservation education, fair exhibits, hunter-safety, production of literature, etc.

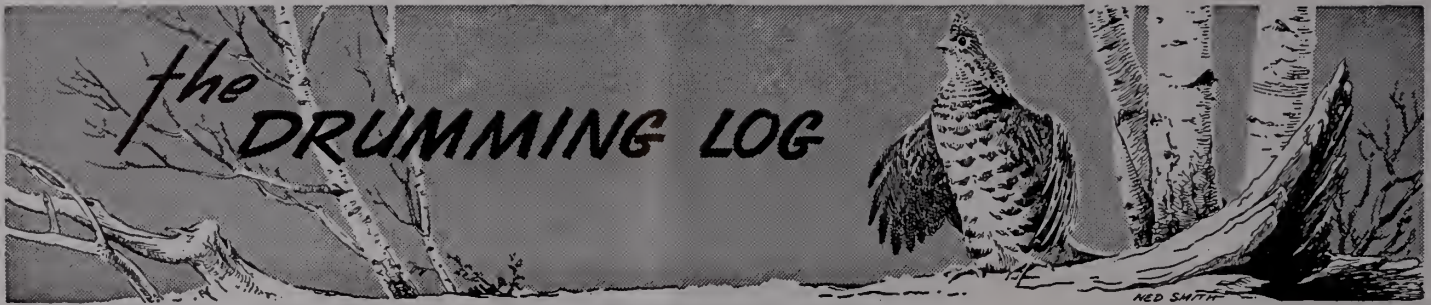
The 1961 convention will be held in South Dakota.

### National Aquarium Proposed

Congressman Michael J. Kirwan (Ohio) has introduced a bill, H. R. 12634, which would authorize the construction of a National Aquarium in Washington, D. C.

According to provisions of the measure, the Secretary of the Interior would be authorized to "plan, construct, operate, and maintain a National Aquarium in the District of Columbia or its vicinity for the display of fresh water and marine fishes and other aquatic resources for educational, cultural, and scientific purposes." The Secretary also would be authorized to collect specimens, prepare and distribute literature, arrange for consultants and lecturers, etc.

A seven-member, nonpartisan Board of Regents would review operations of the Aquarium, prepare an annual report and make recommendations to the Secretary of the Interior and the Congress. The bill was referred to the House Committee on the District of Columbia.



### Izaak Walton League Has 38th Annual Convention

The problem of recreation-minded Americans competing for space on dwindling streams and lakes—and a program to ease the problem—were studied by the nation's conservation and recreation leaders at the 38th annual convention of The Izaak Walton League of America held at Minneapolis, Minnesota on June 22 to 25.

The theme of the convention was "Save Our Shorelines," an objective of the 1960 program of more than 500 chapters of the League who are trying to have set aside as national and state recreation areas outstanding stretches of ocean and Great Lakes shoreline.

### 1960 Hunting and Fishing Economic Survey Planned

The second nationwide economic survey of hunting and fishing will be conducted in January, 1961, and cover activities during the year 1960, the Department of the Interior has reported. The first such survey was made for 1955.

The 1960 survey will be conducted by the Bureau of the Census under an agreement with the Bureau of Sport Fisheries and Wildlife, Fish and Wildlife Service. It will include all of the items upon which data were obtained in the 1955 project plus additional information. The cost is estimated at \$150,000.

The purpose of the survey is to obtain such information as the number of individuals who engaged in recreational hunting and fishing in the United States during the calendar year 1960, the number of days spent in these pursuits and the total expenditures which are attributable to their participation in hunting and fishing for recreation. Any changes since 1955 in the number of sportsmen, time involved, or in the amount of money spent will be noted.

Actually, the Bureau of the Census will begin its operations in December 1960 when a representative National sample of 17,000 households will be contacted to determine the presence of one

or more household members 12 years old or more who hunted or fished in 1960.

The survey conducted early in 1956 showed that approximately 25 billion American anglers and hunters spent nearly \$3 billion in the pursuit of fish and game for recreation during 1955. This averages \$114 apiece. The 21 million anglers spent \$2 billion while 12 million hunters spent nearly \$1 billion. More than seven million individuals engaged in both hunting and fishing.

Copies of Circular 44, *National Survey of Fishing and Hunting, 1955* are available through the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. The single copy price is 40 cents.



### Ducks Unlimited Appropriates \$550,000 for Work on Canadian Duck Breeding Grounds

The Board of Trustees of Ducks Unlimited, appropriated \$550,000 at their 23rd Annual Meeting in Detroit, Mich. on May 5 and 6 to continue the work of restoring and building duck breeding grounds in the Canadian Prairie Provinces in 1960. This appropriation marks the fifth successive year the wildfowl group has allocated a half-million dollars or more for the development of "duck

factories"—all of these funds being contributed by United States sportsmen to preserve and encourage the sport of wildfowling.

With this appropriation of \$550,000, the total amount sent to Canada soared to almost \$7,000,000 which duckhunter-sportsmen have contributed to Ducks Unlimited for the work of building or restoring more than 550 "duck factories" on the breeding grounds in Canada.

In his report to the Board of Trustees, President Tiedeman cited the work accomplished by DU during the past year when 35 new projects were built and 10 extensions added to projects already in operation. He said that during the 22 years of DU's existence 589 projects had been built or restored, 60 of these being retired or consolidated with adjoining projects, leaving 529 active "duck factories" in production with a shoreline mileage in excess of 4,500 miles, in the provinces of Alberta, Saskatchewan and Manitoba.

### Game Techniques Manual Available

How is a female ruffed grouse distinguished from a male? What is the best way to construct a live trap for small mammals such as rabbits? How are estimates of game populations made?

These questions, and many others, are answered in a new book recently published by the Wildlife Society, the work of a committee of seven leading wildlife biologists from various parts of the United States, and Canada.

Dr. Henry S. Mosby of the Cooperative Wildlife Research Unit at VPI edited the mass of material included in the volume. He says that professional wildlife workers have felt the need of such a book for many years. It is entitled, "Manual of Game Investigational Techniques."

While primarily designed for the professional worker in wildlife management, the book contains much of interest to the average hunter, and especially for those whose interest in nature leads them to search for greater knowledge on the subject.

The manual is being sold at cost of publication, so that the information contained may have the widest possible distribution. Copies may be ordered (\$4.50) through the Virginia Cooperative Wildlife Research Unit, Department of Forestry and Wildlife, VPI, Blacksburg.

### **\$30,000 Fine Paid in Fish Kill Incident**

American Viscose Corporation and the State Water Control Board have settled for \$30,000 of the \$154,777 fine levied against the firm concerning a widespread fish kill in the Shenandoah River last year.

The water board charged waste materials dumped into the river caused about a half-million fish to die.

The settlement was announced in a joint statement May 17. In it, the two said the difference in the amounts is represented by the estimated value of \$74,000 placed on nongame fish. The settlement will cover the cost of restocking the river with approximately the same number of game fish allegedly killed, the statement said.

The water board filed suit in Warren Circuit Court on July 7, 1959, when the corporation refused to pay the \$154,777 fine.

State game commission authorities said the Shenandoah will restock itself naturally with nongame fish within a relatively short period of time.

### **Forestry Congress Stamp Details Announced**

The 4-cent commemorative postage stamp marking the Fifth World Forestry Congress, which will be first placed on sale August 29, 1960, at Seattle, Washington, will feature the Congress seal, according to Postmaster General Arthur E. Summerfield.

This seal, in vertical format, features a globe in the upper portion, over which is imposed a stylized tree, flanked by symbols representing the multiple uses of forest land—wildlife represented by a deer; water represented by a waterfall; timber harvesting represented by a stump and axe; outdoor recreation represented by a hiker, and grazing represented by a sheep. In an arc at the top of the seal is the inscription "FIFTH WORLD FORESTRY CONGRESS" in dark Roman lettering.

The stamp will measure 0.84 by 1.44 inches, arranged vertically, and will be printed in green by the Bureau of Engraving and Printing. Collectors desiring first day cancellations of the Forestry



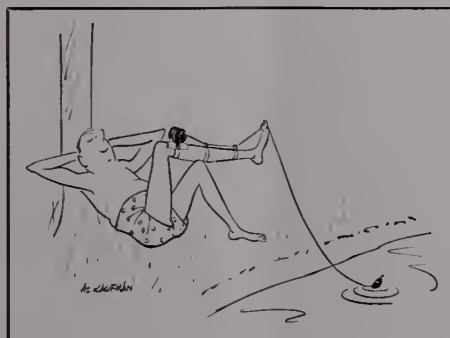
Under construction now on the Commission-owned Gathright Wildlife Management Area is the first of a series of swinging footbridges to be built across the Jackson River to facilitate hunter access. The bridges are being built at a cost of approximately \$1,800 each by Commission personnel under the supervision of Game Refuge Supervisor W. A. Huffman.

Congress stamp may send addressed envelopes, together with remittance to cover the cost of the stamps to be affixed, to the Postmaster, Seattle 1, Washington.

Postmaster General Summerfield noted, "Approximately 2,000 foresters from all over the world will attend this Congress in Seattle to discuss opportunities to make each forest area yield the combination of uses best suited to the needs of the people."

### **Trippensee Retirement Announced**

Dr. R. E. Trippensee, professor of wildlife management at the University of Massachusetts since 1936, retired at the end of June, the Wildlife Management Institute reports. The widely known teacher and wildlife authority authored many articles and two of his books are standard texts in nearly 50 colleges and universities. Dr. and Mrs. Trippensee will continue to reside at 301 East Pleasant Street in Amherst.



### **S. E. Kitchen's 14 Fox Tails Take 1st Prize in Buckingham Trapping**

A carnival atmosphere reigned at the second annual fox trapping jubilee staged in Buckingham County May 11. The event, the climax to a three-month program of intensified trapping of the elusive animal, was sponsored by the Game Conservation Club.

Cash prizes were awarded to the three persons submitting the largest number of tails for counting. S. E. Kitchen turned in 14 to take the first place prize of \$15. Second was C. M. Townsend with 13. He received \$10. Lawrence Newton ranked third for a \$5 prize and 11 tails. Prizes were based on the number of fox-tails turned in at Shepherds' pasture.

The program is designed to reduce the spread of rabies and to offer added protection to game.

### **Mattison to Conduct AFA Teaching Aid Study**

C. W. Mattison, director of the school and college cooperation program of the U. S. Forest Service and the founder and president of the Conservation Education Association, Inc., has been retained by The American Forestry Association to direct a pilot study on how to best produce a series of conservation teaching aids for upper elementary grade school teachers.

According to the announcement made by Fred E. Hornaday, executive vice president of the AFA, the association's board of directors strongly believes that a need exists for efficient how-to-do-it conservation teaching aid materials to be placed in the hands of elementary school teachers. At a meeting of the board in February, funds were appropriated for a preliminary pilot study on how to prepare such materials with the ultimate aim being a nation-wide program aimed at all of the country's elementary school teachers. A preliminary study by Mr. Mattison was presented to the board in June.

A native of New York State, Mr. Mattison received his forestry degree at Cornell University. Since then he has worked continuously in his profession of forestry and has had experience in the forests of California, North and South Carolina, Arkansas, Florida, New York, Pennsylvania, New Jersey, and Virginia. He has directed the school and college cooperative program of the Forest Service since 1946. In 1957 he founded the Conservation Education Association, Inc. He retired from the Forest Service in July.

### Limited Progress Being Made on Oceanic Pollution Abatement

Some limited progress is being made on reducing pollution of the seas, a factor which annually results in the deaths of thousands of birds and other animals and uncounted hordes of fish and shellfish and the desecration of seashore recreational areas, including beaches.

The U. S. Senate now is considering "Executive C," a message from the President which recommends that the U. S. accede to the 1954 International Convention for the Prevention of Pollution of the Sea by Oil. Since this is a treaty, only the Senate must approve of the U. S. participation in the Convention.

Many governments, including the United States, have laws prohibiting the discharge of oil and oily wastes within their territorial water. The 1954 convention is concerned with cleaning up the situation resulting from oil discharged on the high seas and which drifts ashore in quantities sufficient to foul beaches and to kill wildlife. As early as 1922, the Congress called attention to the problem in a Joint Resolution. Twelve nations, which have under their registry somewhat more than half of the gross tonnage of the total world tanker fleet, already have adopted this Convention.

U. S. ships have been adhering to the principles of the 1954 convention on a voluntary basis but official approval by this country would help to further clean up a disagreeable and costly situation.

Meanwhile, the opening of the Great Lakes to additional shipping through completion of the St. Lawrence Seaway brought marine pollution to parts of the interior of the U. S. Many public recreational areas on the Great Lakes have been polluted with sewage and other wastes and already have been closed.

To combat the problem, the U. S. Public Health Service called the first meeting of its "Advisory Committee on Sewage and Waste Disposal from Vessels" on May 6. Representatives of the Corps of Engineers, Coast Guard, the Maritime Administration and the Navy agencies of BuMed and BuShips attended.

The Maritime Administration, which supervises new ship construction, is insisting upon the reservation of space for at least sewage retention tanks where ships are designed to enter the Great Lakes. Thus far, the problem stems from insistence of ship owners on demanding maximum cargo space plus the fact that water pollution control agencies have not demanded such equipment. Special prob-

lems involved in multiple drainage systems, ventilation, weight distribution, etc., also must be overcome. Some prime objectives of the committee include the promotion of adequate treatment devices acceptable to the states, which have jurisdiction in their areas.

The Navy Department is aware that drainage systems must be redesigned to meet new conditions and future vessels will be equipped with systems which separate out and collect sanitary sewage for treatment prior to disposal overseas. Alteration of old ships, however, is practically hopeless from the view of collecting and treating sewage.

Smaller craft have similar problems on both fresh and salt water areas. New Hampshire now has a model law which requires that any craft with a marine toilet be equipped with a treatment device and the plan is spreading to other areas.



This purple martin house is the pride and joy of Thomas R. Gardner of Elmhurst Avenue in Norfolk. Its sections are held together with screendoor hooks, and the column is hinged to make it easy to take down and hollow for air passage through the center of the house.

### IS THIS LURE LEGAL?

(Continued from page 3)

Since laughing under water is difficult even for a fish, one frequently is strangled by the water it swallows in its uncontrolled outburst and is forced to the surface for a gulp of fresh air. As I fish this new fly upstream, the fish will drift down to me and I am able to net it as it struggles on the surface. The fish isn't even hooked so I don't have the boorish task of freeing it. All that is necessary is for me to scoop it up and drop it in my creel if it's a beauty or dump it back to grow some more.

Now, Mr. Editor, what I must know is this. Does catching a fish in this manner constitute any violation of either the law or the fisherman's code—is it legal and ethical? The orthodox fisherman hooks and plays his fish until it is thoroughly exhausted and then, when the fish is unable to save itself, nets or gaffs it. And I am certain no fisherman ever fails to make a violent try with his net for the fish should the hook pull out or the leader break. Consequently, I just can't understand why the fact he has his fish hooked for a time and I never hook mine makes my method less legal and sporting. Both of us fool the fish into ending up in the net, so what's the difference?

But many members of the fishing fraternity frown upon my stream technique and are even guilty of some quite uncomplimentary remarks about it. I have been told I'm no sportsman but only a game hog. And a few "purists" have warned me that I'll find myself in duress.

Mr. Editor, I want to get it in the records that I am a law-abiding citizen and above all an A-number-one, dyed-in-the-wool sportsman. For other than a ticket for racing a truck and another for overtime parking which my former friend, the mayor, wouldn't fix for me, I've never been in the hands of the law. And, moreover, for years I've been a dues-paying, non-attending member of the local chapter of the I.W.L.A. and hold its sportsman's certificate for contributing \$10 to its club fund. So I heartily resent any person's questioning my good citizenship or sportsmanship. And I must say now that I'm beginning to be just a little angered by their unwarranted accusations. In fact, since I have a pretty bad temper, I'm afraid that, if it continues, I shall lose control of myself and punch some conservation brother in the nose. I'm a peace-loving person so I don't want to take any such violent action in defense of my reputation and rights, especially as I'm too old and winded to run and too soft to fight. All I ask is to be left alone in peace—lovely piscatorial peace.

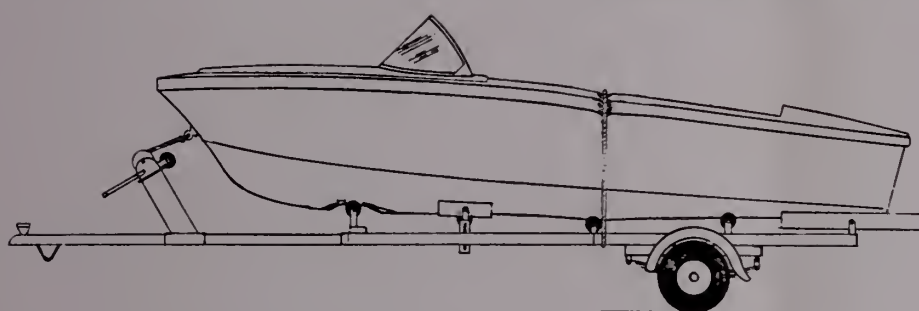
Therefore, Mr. Editor, I request your valued opinion of my new technique. Is it legal and right? And please, sir, let me know by return mail as I've tied a number of the flies and am most anxious to use it this spring. And by the way, I've reconsidered and decided to keep my method secret. However, if you say it's both legal and sporting, I'll send you a few so you can catch fish too. (I hear you've had some tough luck lately.)

Sam Vanderslice  
Falls Church, Virginia



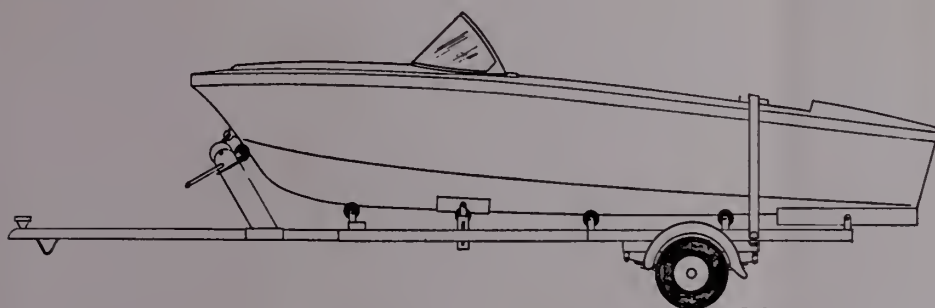
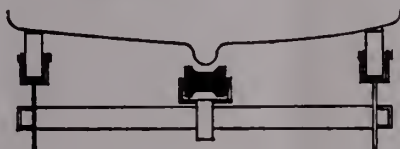
## HOW TO LOAD AND CARRY SMALL BOATS

Prepared by the builders of  
Arkansas Traveler Boats.



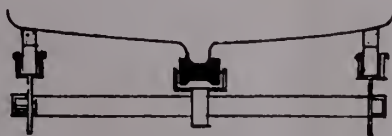
### INCORRECT WAY

Keel is not riding on rubber supports. Support blocks are not beveled and covered with soft carpet material.  
DON'T bend and scar gunwale with improper tying methods.  
DON'T bend and break keel with improper adjustment of rubber support rollers.  
DON'T support the entire weight of the boat on the keel.



### CORRECT WAY

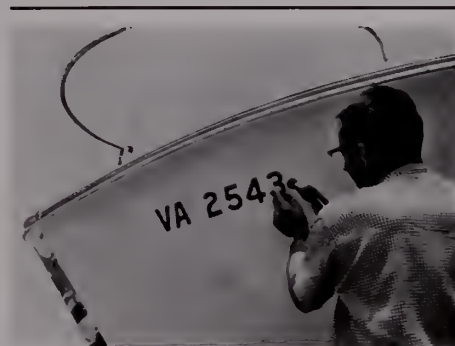
Bevel support block to fit contour of boat and cover with soft carpet material.  
DO tie securely with adequate brocing.  
DO bevel support blocks to fit contour of boat and cover with soft carpet material.  
DO adjust winch so rubber roller will fit bow of boat.  
DO fit boat on trailer so that transom is at end of rear support block.  
DO adjust all rollers and support blocks so that each will carry an equal load.



### If You Have A Boating Accident . . .

Virginia's new boat law imposes certain specific duties on the operator of any boat, whether it is registered (numbered) or unregistered, which is involved in a collision, accident, or any other casualty:

1. He is required to render such assistance to other persons affected by the accident as may be practical and necessary in order to save them or minimize any danger resulting from the accident.
2. He is required to give his name, address, and the number of his boat, in writing, to any person injured and to the owner of any property damaged.
3. He will be required to make a complete report of the accident, within 10 days thereafter, on a form obtainable from game wardens if the accident results in death of any person, injury causing any person to be incapacitated for more than 72 hours, or property damage in excess of \$100.



Commission Photo by Kestehoe

Over 25,000 Virginians had applied for state boat numbers by mid-July. The numbers are required on all boats powered by motors of 10 horsepower or over.

### Don't Abandon Sinking Boat

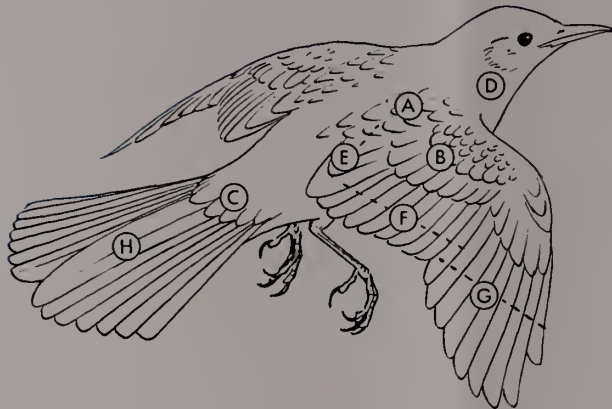
Most boat accidents result from mistakes, the worst of which generally is leaving the capsized or sinking craft.

Most boats these days are equipped with floatation tanks which prevent it from completely submerging in most circumstances. Even an old, wooden type usually will not go to the bottom unless waterlogged or overloaded.

All occupants of a boat in distress should (1) get rid of excess weight, (2) ease over the side, (3) hang on to boat and (4) wait for help.

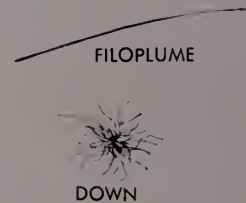
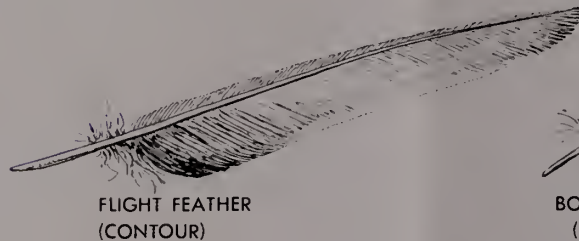
# BIRD FEATHER FACTS

## DISTRIBUTION OF CONTOUR FEATHERS

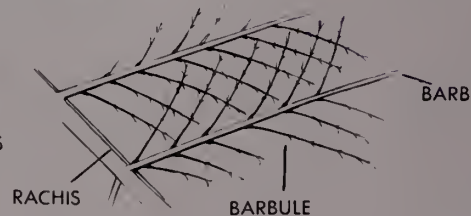
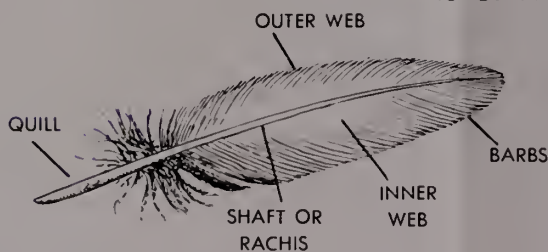


- (A) SCAPULARS
- (B) WING COVERTS
- (C) TAIL COVERTS
- (D) BODY FEATHERS
- (E) TERTIALS
- (F) SECONDARIES
- (G) PRIMARIES
- (H) TAIL FEATHERS

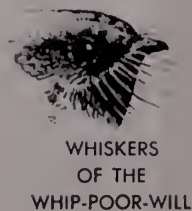
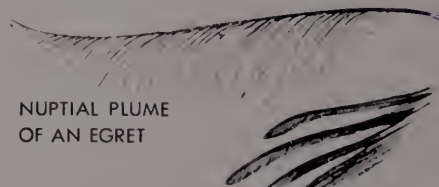
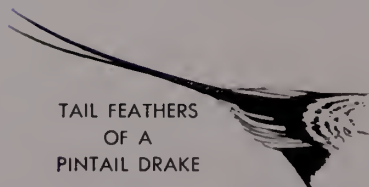
## BASIC TYPES OF FEATHERS



## PARTS OF A FEATHER



## MODIFIED FEATHERS



STIFF, NARROW PRIMARIES OF  
WOODCOCK PRODUCE FLIGHT SOUND

SOFT-EDGED PRIMARY  
OF OWL PROVIDES  
SILENT FLIGHT



NEED SMITH







